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A Review of the Genus *Arhapse* Herrich-Schäffer

(Hemiptera: Largidae)

THOMAS F. HALSTEAD

Arizona Commission of Agriculture and Horticulture, Phoenix 85005

Herrich-Schaffer originally described the genus from "Carolina" in the form of *Arhapse carolina*. In 1873 Walker described *A. cicindeloides* from Mexico; and in 1911 Barber united *Japetus* Distant with *Araphe* (apparently following Uhler's 1872 misspelling of the generic name) and described *A. mimetica*, thus including *J. sphaerodes* in *Araphe*. In 1924 Barber described *A. breviata* from Kansas and again separated *Japetus* from *Arhapse*, including *J. sphaerodes* Distant and *J. mimeticus*. In 1956 Bliven added *Jarhaphetus argutus*. This paper again unites the two genera, places *Jarhaphetus* Bliven as a synonym of *Arhapse*, and describes two new species.

The set of characteristics which sets this genus apart from other Largidae is the combination of the absence of any pronotal or thoracic spination and the possession of a stridulatory apparatus consisting of ridges or corrugations along the edge of the corium with accompanying rasp on hind femora.

ARHAPHE Herrich-Schaffer

Arhapse Herrich-Schaffer, 1850: IX: 175 and 183.

Araphe, Uhler, in Hayden, 1872: 471.

Japetus Distant, 1883: 227; Barber, 1924: 227.

Arrhapse, Bergroth, 1913: 166.

Jarhaphetus Bliven, 1956: 10. (New Synonymy).

KEY TO SPECIES OF ARHAPHE

1. Head and prothorax coarsely punctate 2
Head impunctate (prothorax impunctate except in *A. capitata*) 4
2. Membrane white with central black spot *mexicana* Halstead, n. sp.
membrane with base white and tip apparently black 3
3. Entire corium brick-red *sphaerodes* Distant
Corium yellow to white with medial black fascia *carolina* Herrich-Schaffer
4. Membrane very much reduced, if present at all represented only by narrow
band 5
Membrane entire 6

5. Row of puncta along claval suture entirely immersed in black band; posterior femora almost reaching abdominal apex *cicindeloides* Walker
 Row of puncta along claval suture black, each surrounded by white of corium; posterior femora not extending beyond fourth abdominal segment *breviata* Barber
6. Head level between and behind eyes *mimetica* Barber
 Head rising to an elevated knob between and behind eyes
 *capitata* Halstead, n. sp.

ARHAPHE CAROLINA Herrich-Schaffer

Arhapse carolina Herrich-Schaffer, 1850: IX: 183, tab. 315, fig. 968.

Araphe carolina Barber, 1911: 28.

DIAGNOSIS.—Known from North Carolina south to Florida, thence west through Tennessee to Arizona and Baja California. Cited from "Mexico" by Stal (1870). Easily distinguished from other punctate forms by coloration of corium and by characters in key. Length 7–10 mm.

ARHAPHE CICINDELOIDES Walker

Arhapse cicindeloides Walker, 1873: VI: 36.

Jarhaphetus argutus Bliven, 1956: 10. (New Synonymy).

DIAGNOSIS.—Known from Arizona and New Mexico, thence south into Mexico at least as far as Sinaloa. Large and black, elongate oval, head and prothorax impunctate, variously pubescent. Corium white with central broad black fascia from side to side. Anterior femora armed with single more or less obvious tooth near apex. Head as broad as or broader than pronotum. Length 9–12 mm. Bliven's description and photograph of *Jarhaphetus argutus* clearly match *A. cicindeloides*. Barber is the only one to mention or use the femoral tooth as a character in separation of the genera, and he must have had individuals of *A. cicindeloides* in which the spines were very small to have missed them. Bliven based his new genus and species on presence of the spine and width of the head, both very variable in this species.

ARHAPHE SPHAERODES (Distant)

Japetus sphaerodes Distant, 1883: 227; Barber, 1924: 227.

Araphe sphaerodes Barber, 1911: 28.

DIAGNOSIS.—The following description of the unique type deposited in the British Museum (Natural History) by Distant was kindly furnished by Mr. W. R. Dolling of that institution: Entirely black except hemelytra. Thorax, abdomen and legs fine silvery recumbent pubescent.

Head, thorax and femora fine sparse erect pubescent. Head shining, coarsely reticulate sculptured. Many interstices of sculpturing bearing single large punctures, each separated from its neighbors by two-thirds to one and one-half times its own width. Hemelytra reaching about $\frac{9}{16}$ the distance from pronotal posterior to abdominal apex. Corium entirely and uniformly clear brick-red. Angle of clavus between pronotum and scutellum infusate, sharply marked off from rest of clavus, clavus concolorous with corium except at its inner edge, where fuscus color runs along innermost line of punctures and fades out just beyond scutellar apex. Basal third of each membrane ivory white; apical two-thirds dark brown. A narrow ivory band borders apical margin; but resulting diamond-shaped spot appears as dark apex, not dark mark in middle, as apical marginal band very narrow. Ratio of antennal segments 45:35:22:50 (basal first, arbitrary units). Basal segment of posterior tarsus accounting for three-fifths of its length. Ratio of head width (across eyes) to anterior thoracic lobe to posterior thoracic lobe 33:23:26½ (different units than above). Rostrum just surpassing anterior coxae. Length 9 mm.

TYPE.—S. Geronimo, Guatemala, Champion.

ARHAPHE MIMETICA (Barber)

Araphe mimetica Barber, 1911: 28.

Japetus mimeticus Barber, 1924: 227. New Synonymy.

DIAGNOSIS.—Known from the Huachuca, Santa Rita and Atascosa Mountains of southern Arizona, but very probably more widespread into south and east. Encountered in oak leaf litter in numbers at Madera Canyon, Arizona, in August. Well differentiated from other species by characters in key. Length 6–8 mm.

ARHAPHE BREVIATA Barber

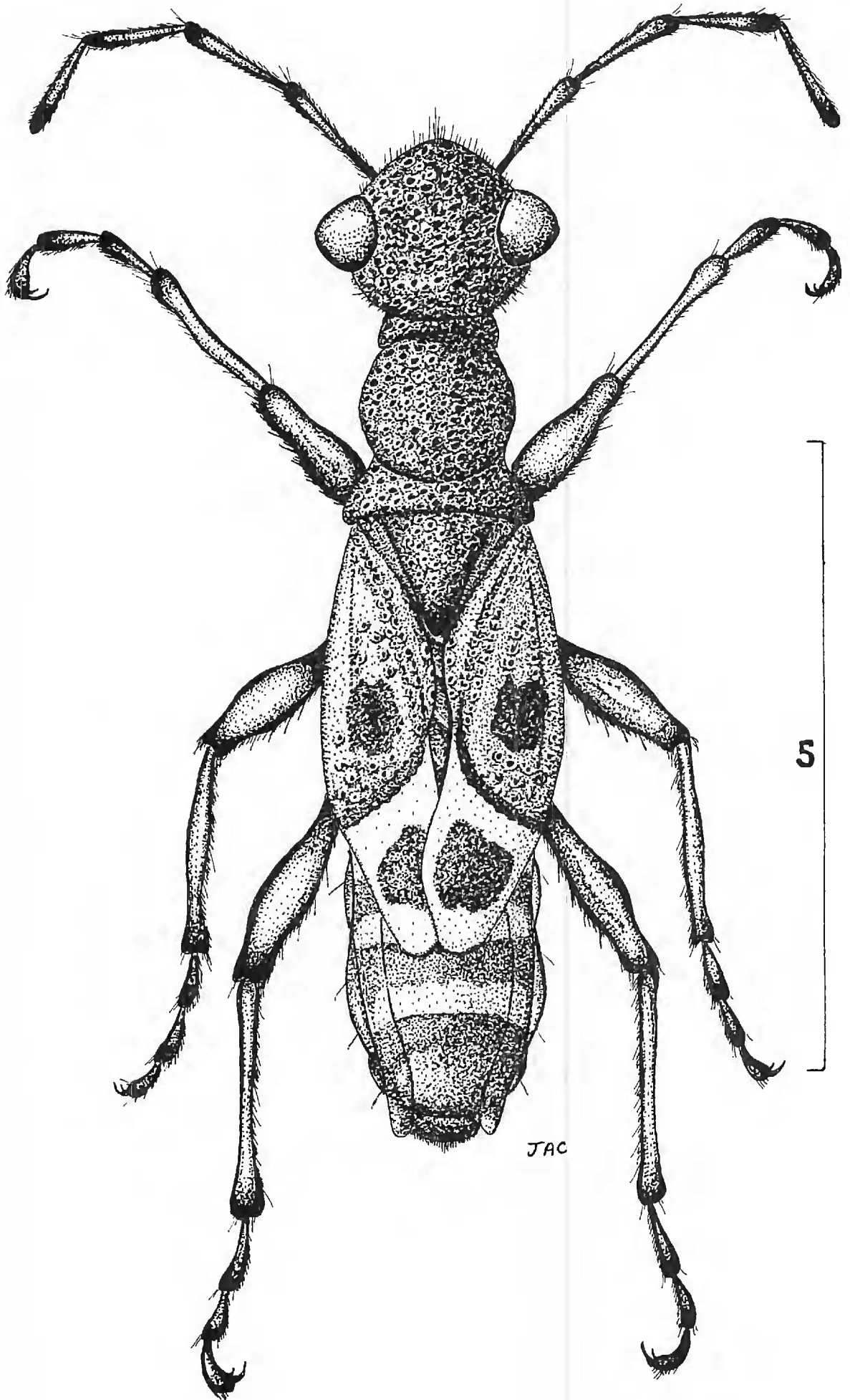
Arhaphe breviata Barber, 1924: 227.

DIAGNOSIS.—Known only from Kansas. Well differentiated from *A. carolina* by absence of head and anterior pronotal punctation and from *A. cicindeloides* by characters in key. Length 7.3–8.25 mm.

Arhaphe mexicana Halstead, new species

(Fig. 1)

DIAGNOSIS.—Known from two male specimens taken near Cuernavaca, Morelos, Mexico. Very distinct from *A. sphaerodes*, the most similar species in genus.



Length of holotype male 8.3 mm (paratype 8.3 mm), width across head (including eyes) 1.9 mm (paratype 1.9 mm), ratio of head to anterior thoracic lobe to posterior thoracic lobe 24:17:21. Width across corium 1.7 mm (paratype 1.7 mm).

MALE.—Linear elongate, black. Head, entire thorax and scutellum coarsely punctate. Corial margins with line of punctures; scattered punctation on remainder. Clavus with marginal lines of puncta; diagonal line of puncta from mid-anterior margin to apex. Anterior femora armed with minute spine near apex. Entire body except corium covered with fine closely appressed silver tomentum, this absent on large circular patches of sides of third through sixth ventral segments and anterior margins of abdominal dorsal segments, appearing as black spots on silver background. Head and thorax sparsely covered with long black hairs. Corium pale orange with black line along apex and circular black spot in middle. Clavus pale orange with black triangle, wider at base and fading out to apex, along its inner margin. Rostrum reaching just beyond anterior coxae. Antennal ratio 27:23:15:31 (basal first, different units than above), reaching somewhat beyond pronotal posterior, first segment somewhat curved.

FEMALE.—Unknown.

Holotype male, 3–6 MI. S. CUERNAVACA, MORELOS, MEXICO. 1 April 1959. 4,000 ft. H. E. Evans (Cornell type number 4609).

PARATYPE MALE.—Cuernavaca, Morelos, Mexico. 17 March 1959. 5,000 ft. H. E. Evans and D. M. Anderson collectors. Deposited in the author's collection.

Arhapse capitata Halstead, new species

DIAGNOSIS.—Known from two male specimens taken in Morelos, Mexico. Similar in appearance to *A. mimetica* but differing by scattered punctation on pronotal anterior, elevated knob between and behind eyes, and hemelytral membrane surpassing abdominal apex.

Length of holotype male 6.67 mm (paratype 6.9 mm). Width across head (including eyes) 1.9 mm (paratype 1.9 mm). Ratio of head to anterior thoracic lobe to posterior thoracic lobe 22:17:23. Width across corium 1.9 mm.

MALE.—Elongate, black. Head shining black, impunctate, with rather sparse short fine white pubescence on sides and front, with rounded knob between and behind eyes. Collar and prothoracic anterior black, sides sparingly punctate, silvery pubescent. Prothoracic posterior velvety black, coarsely punctate, without pubescence. Scutellum black, silvery pubescent, coarsely punctate. Ventrums black except white posterior margin of metathorax, silvery pubescent, shining. Clavus black, with three lines of punctation running from base to apex along margins and in middle. Femora armed with minute spine. Corium white, with transverse broad black fascia from side to side, row of black puncta along calaval suture,

←

FIG. 1. *Arhapse mexicana* Halstead, n. sp.

otherwise heavily punctate. Membrane white with very large central black or dark brown circular spot; surpassing abdominal apex. Rostrum reaching halfway to mesocoxae. Antennae slender, fourth segment brown; lighter in color than others. Antennal ratio 27:25:17:30 (basal first, different units than above), first segment strongly curved.

FEMALE.—Unknown.

Holotype male, HUAJINTLAN, MORELOS, MEXICO. 14 May 1959. 2,500 ft. H. E. Evans (Cornell type number 4610).

PARATYPE MALE.—Same data, deposited in the author's collection.

DISCUSSION.—In 1911 Barber described *A. mimetica* and placed Distant's *Japetus* as a synonym of *Arhapse*. In 1924 he re-erected *Japetus*, including *J. sphaerodes* and *J. mimetica*. He separated *Japetus* as follows, "Head more globose, as long as but considerably wider than pronotum; membrane less abbreviated; body and legs without profuse coating of long setae, almost nude; posterior lobe of pronotum not at all or very sparsely tomentose; anterior femora armed with a single small tooth near apex; rostrum short." If an attempt is made to separate specimens on this basis, one immediately runs into many incongruities. *Arhapse mexicana*, closest relative to *A. sphaerodes*, has a very heavily tomentose posterior pronotal lobe and long setae on the legs and body. *Arhapse cicindeloides* does have anterior femoral spines, and the head width is variable. The rostrum of the species apparently falling into *Japetus* is shorter, usually only attaining the anterior coxae; but that of *A. capitata* almost reaches the mesocoxae. The head of *A. mexicana* is very flattened, that of *A. mimetica* less so, and that of *A. capitata* even less—approaching *A. cicindeloides* in globosity. In addition, I have a single as yet undescribed Mexican specimen of *Arhapse* closely resembling *A. cicindeloides*, but possessing hemelytra complete with a fully developed membrane which surpasses the abdominal apex. Attempts to separate specimens by use of a length-to-width ratio result in some males of *A. carolina* being placed with *Japetus*. I have examined slide mounts of the parameres of *A. carolina*, *A. cicindeloides*, *A. mimetica*, *A. mexicana*, and *A. capitata* and can find little of use in specific, let alone generic, differentiation. These very similar parameres do show a uniform variation from those of *Largus* and *Stenomacra* species examined. From the above data it becomes clear that separation cannot reasonably be continued, and members of this homogeneous group must be placed in a single genus.

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LITERATURE CITED

- BARBER, H. G. 1911. Descriptions of some new Hemiptera-Heteroptera. J. N. Y. Entomol. Soc., 19: 23-31.
1924. The genus *Arhapse* in the United States (Hemiptera-Pyrrhocoridae). Can. Entomol., 56: 227-228.
- BERGROTH, E. 1913. Supplementum catalogi Heteropterorum Bruxellensis, II: Mem. Soc. Entomol. Belg., 22: 123-183.
- BLIVEN, B. P. 1956. New Hemiptera from the western states with illustrations of previously described species and new synonymy in the Psyllidae. Occidental Entomol., Nov. 1956: 1-27.
- DISTANT, W. L. 1880-1893. Biologia Centrali-Americana. Heteroptera I. London, 462 p.
- HERRICH-SCHAFFER, G. A. W. 1850. Die Wanzenartigen Insecten. IX. Nurnberg.
- STAL, C. 1870. Enumeratio Hemiptorum. I. Kongliga Svenska Vetenskaps Akademiens Handlingar. 9 (1).
- UHLER, *in* HAYDEN. 1872. Preliminary report of the U. S. Geological Survey of Wyoming.
- WALKER, F. 1873. Catalog of the specimens of Hemiptera Heteroptera in the collection of the British Museum. VI. London.

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